Final Abstract Number: 41.047
Session: Infectious Disease Surveillance
Date: Thursday, June 14, 2012
Time: 12:45-14:15
Room: Poster & Exhibition Area

Preparing Lao PDR to manage emerging infectious disease threats through field epidemiology training

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Background: Against the backdrop of pandemic influenza threats, including highly pathogenic avian influenza, Lao PDR recognized the need to strengthen and decentralize national epidemiological capabilities. This was addressed by establishing an adapted Field Epidemiology Training (FET) Program.

Methods: With critical human resource pressures, the Lao Ministry of Health (MoH) developed an innovative one-year FET tailored to the Lao context. Eight trainees from national and provincial level are selected annually from both human (6) and animal (2) health sectors thereby facilitating the "one health" concept. Each of three modules consists of one month practical classroom instruction and three months of applied/field experience. Each FET is assigned an operational research project tailored to meet national public health needs. Applied activities are linked to supporting essential surveillance and response activities at the National Centre for Laboratory and Epidemiology (NCLE).

Results: The alumni FET network now boasts 23 graduates who have returned to their workplace after completing the training and cover 16 of 17 Provinces. FET has proved to be a critical resource in the rapid identification and response to outbreaks and in providing more accurate and timely surveillance data. Furthermore, the network of graduates, armed with new skills, now comprise the core human training resources for undertaking training taken to the local levels.

Conclusion: FET has played a major role in developing core surveillance and response capacity in Lao PDR. The applied nature of the training has equipped graduates with the ability to readily and effectively employ their newly gained knowledge when back to work. In addition, the impact of trainees' field work findings and recommendations has translated into MoH policy for the control of communicable diseases. These include, for example, the starting of new vaccine initiatives for rubella and Japanese Encephalitis. In the near future Lao FET is to be further strengthened through development of the alumni network and a focus on training for trainers, supervisors and mentors.

http://dx.doi.org/10.1016/j.ijid.2012.05.323

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Surveillance of a municipal drinking-water supply after a Norovirus outbreak in Italy

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Background: During March 2011 an outbreak of gastroenteritis was identified by the local public health service in S. Stefano di Quisquina, Sicily, Italy. Over two weeks, 156 cases were identified and Norovirus (NoV) genotype GII.4 v2010 was identified in stool samples from eleven patients. The finding of identical genomic sequences between patients suggested a common infection source and epidemiological investigation indicated a possible correlation to municipal drinking water consumption.

Methods: Regular water sampling and testing was performed to monitor the efficiency of control measures. Water samples from the public water system were also tested for NoV by different molecular methods and their performance was compared.

Results: Over a five months surveillance, a variety of NoV genotypes was detected, including GI.1, GI.4, GII.7, GII.21 and GII.4, but GII.4 genomic sequences belonged to different variants than that involved in the gastroenteritis outbreak. However, not all samples that tested positive for NoV by Real Time RT-PCR were confirmed by One-Step RT-PCR and sequence analysis.

Conclusion: Contamination of one of the wells supplying the public water network was thought to be the source of the NoV contamination we detected. A water origin of the NoV outbreak of March 2011 remains tentative, since we have no evidence that the same NoV clone could be detected in both patient and environmental samples and the municipal water contamination revealed might have followed the outbreak. However, epidemiological and molecular investigations guided outbreak control measures and suggested interventions to prevent future network contaminations. The use of municipal drinking water was restricted and alternative water supplies were provided to the population (drinking bottled water). The submersible water pump of the municipal well was replaced and chlorine concentration of the water supply was increased. These interventions resulted in a quick decrease of cases. The investigations also resulted in formulation of recommendations to local authorities pertaining to outbreak management in order to prevent similar outbreaks in the future.

http://dx.doi.org/10.1016/j.ijid.2012.05.324